CONCLUSION: KNOWLEDGE AND INQUIRY GAPS

Twenty years after the advent of the personal computer, we have a relatively clear picture of who has access to home computers and, more recently, to the Internet. The patterns of IT diffusion and adoption clearly suggest that IT is still very much a resource acquired by more affluent and well-educated Americans. Although PCs have been diffusing rapidly in recent years, they are diffusing more slowly into poor and minority households, and the research on both PC and Internet adoption behaviors indicates that socioeconomic and demographic factors continue to be the primary predictors of home IT access. Very simply, income allows families to hurdle affordability barriers to adoption, and well-educated individuals are more likely to be aware of and appreciate the ways IT can be used in the home.

The picture is a bit less clear with respect to usage patterns. Empirical research on home computing dates from the early to mid-1980s. This early adopter research suggests that the primary use of home computing was for education, play, work, and basic word processing; findings generally suggested that children tended to use home PCs more often and for longer periods than adults. Strong differences by sex appeared in some studies. Women and girls overall seemed to use the computer less often and less intensively than their male counterparts, and were much less likely to be heavy users of the technology. Sizable proportions of early adopters found that they used the computer less than they had initially expected, and, in one long-term study, nearly one-fifth of families had quit using the PC entirely within 2 years. It is not clear whether this underutilization of the home computer was due to the inability of the technology to meet needs within the family, the relative lack of quality software for the early computers, or other factors.

More recent research on Internet use reinforces some of the impressions generated by the early computing studies. Children and male teenagers still tended to be the heaviest users of IT. The Internet has made a new form of interpersonal communication available to households, and several analyses suggested that e-mail and communication drive use of the Internet by individuals and households. Specific informational content derived from the Web was relatively unique to each individual's interests and needs, but broad patterns of information use emerged. Americans most often sought information related to health and leisure. Affluent and educated individuals also used the Internet for work, while socioeconomically disadvantaged groups used the Internet to seek jobs and take classes.

Many studies pointed to the profound role of socioeconomic and demographic variables as predictors of use. Several interesting patterns of differential use of home IT simply disappeared once income, education, sex, and race/ethnicity were accounted for. For example, regional variations, the degree of involvement with community organizations, use of other media, daily "hassles," depression, innovativeness, computing experiences and attitudes,[30] and social integration seemed to be associated with home IT adoption and use behaviors, but were not statistically significant once the role of sociodemographics was introduced. As with adoption dynamics, sex, race, and ethnicity emerged in several studies as important correlates of IT usage patterns.

What we do not know about impacts is substantial. How do families and individuals use information gained from the Web and with what consequences? What are the outcomes of the growing role of e-mail in some families' lives? Are they any better off than families without e-mail? Do PCs meet the needs and desires of those in the home, or will the recent rush to purchase computers lead to disappointment and abandonment (again) by families with naive hopes for the technology and overly high expectations? Does the personal computer have any greater role and purpose as a family tool than it had 20 years ago? How does the presence of home computing affect family dynamics and relationships? Does it diminish or enhance quality of life, and under what circumstances? Are there pathologies associated with extensive Internet use? How does computer-based work at home affect the nature of home itself?

Least understood is whether the socioeconomic inequities that exist in access to home information technologies matter, and how. The implicit assumption is that the absence of IT in the home perpetuates social

[30]The lack of statistical significance for computing experience and attitudinal variables—once sociodemographic factors have been controlled for—may seem surprising and counter-intuitive. However, people with computing experience tend to be male, white-collar professionals, as are those with strong positive attitudes toward new technologies. Note that these findings are based on the early adopter studies, in which early adopters tend to be affluent, professional men with access to computers at work and an inclination to be the "first" to buy a new technology.

and economic disadvantages: individuals and families cannot build the computing skills needed in today's labor force, important educational resources cannot be accessed, and information needs go unaddressed. Even before the internet, Childers (1975) created a vivid portrait of how minorities, the chronically poor, and other groups in American society were informationally disadvantaged. These groups tended to have fewer lines of access to information, the quality and accuracy of their information was low, and their information networks were simply less enriching than those available to the rest of society. Those deprived of quality information suffer from compromised decision-making and problem solving related to their quality of life and well-being. Can home IT remedy these disadvantages?

Some of our knowledge and inquiry gaps can be filled with existing data resources. The CPS data and the Pew Research Center data are both publicly available and contain rich detail on home IT adoption, use, and sociodemographics. The Pew and CPS data can be used to address more detailed questions related to home IT adoption and use; it would be helpful too if these surveys contained items concerning the possible impacts and outcomes of home IT use.

Other knowledge and inquiry gaps will be hard to fill. Impact research, when properly conducted, is labor intensive, expensive, and time consuming. Such analysis will not occur without major funding by government agencies, industry, and foundations. There are many areas for fruitful impact analysis. Family dynamics, the consequences of health informatics, the outcomes of home computing for learning and educational success, quality of life improvements for low-income families that have adopted a computer, and the impacts of computer-based work at home are all areas of concern. Knowledge of such outcomes can ideally contribute to more effective IT management in the home and more positive outcomes for families and households.